

WHAT IS CLAIMED IS:

- 1 1. A fluid pump for pumping liquid, comprising:
2 a motor housing assembly having an inlet housing, a stator housing
3 assembly, and an outlet housing;
4 wherein the stator housing assembly includes a substantially
5 cylindrical metal case and an encapsulated stator assembly enclosed and sealed by a
6 polymeric capsule member, and the polymeric capsule member defines a rotor
7 cavity;
8 an impeller rotatably positioned in the inlet housing and having an
9 impeller axis; and
10 a rotor assembly rotatably located inside the rotor cavity and
11 connected to the impeller for rotating the impeller for pumping liquid from the inlet
12 housing to the outlet housing.
- 1 2. The fluid pump of claim 1, wherein the inlet housing and outlet
2 housing are fastened together to secure the stator housing assembly therebetween.
- 1 3. The fluid pump of claim 1, wherein the metal case includes
2 liquid flow passages formed therein by diffuser vanes and inner and outer walls of
3 the metal case, thereby completely defining the liquid flow passages.
- 1 4. The fluid pump of claim 1, wherein the polymeric capsule
2 member comprises a thermally conductive, electrically insulative material.
- 1 5. The fluid pump of claim 1 wherein the stator housing assembly
2 further includes a front cover and a rear cover plugging opposing ends of the rotor
3 cavity.
- 1 6. The fluid pump of claim 5, further comprising inlet diffuser
2 vanes formed on the front cover.

1 7. The fluid pump of claim 1, wherein the rotor assembly
2 includes a rotor with a rotor shaft.

1 8. The fluid pump of claim 7, wherein the rotor shaft is supported
2 by a front bearing and a rear bearing.

1 9. The fluid pump of claim 8, wherein the rear cover contains a
2 bearing seat for locating the rear bearing.

1 10. A method of manufacturing an encapsulated stator assembly,
2 comprising:

3 providing a front cover and a rear cover;

4 providing a hollow, substantially cylindrical metal case with a
5 longitudinal axis and two open ends;

6 locating a stator assembly within the metal case;

7 temporarily capping the two open ends and encapsulating the stator
8 assembly in a polymeric material; and

9 uncapping the two ends and attaching the front cover and the rear
10 cover to the metal case.

1 11. The method of claim 10, wherein the polymeric material is
2 thermally conductive and electrically insulative.

1 12. The method of claim 10, wherein the metal case includes liquid
2 flow passages formed therein by diffuser vanes and inner and outer walls of the metal
3 case, thereby completely defining the liquid flow passages.

1 13. The method of claim 10, wherein the front cover includes
2 diffuser vanes formed thereon.

1 14. The method of claim 10, wherein encapsulating the stator
2 assembly in the polymeric material includes forming a cavity therethrough.

1 15. The method of claim 14, wherein the front and rear covers are
2 each configured to receive a bearing to support a shaft disposed within the cavity.